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EXAMINER
YUN, EUGENE

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/688,181	MARTIN ET AL.	
	Examiner	Art Unit	
	Eugene Yun	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 March 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dvorkin (US 6,381,471) in view of Ahonen (US 5,507,010).

Referring to Claim 33, Dvorkin teaches a method of enhancing reception of communication signals in a multi-band, multi-mode communication device (fig. 1), the communication device having a plurality of electrically separated antennas 4 and 5 (fig. 1), and a plurality of signal paths for receiving communication signals in a plurality of frequency bands, said method comprising the steps of:

providing at least a first feed point 30 and 31 (fig. 1) and a second feed point 32 and 33 (fig. 1), the first and second feed points adapted to connect separately to at least two of said plurality of antennas (see col. 4, lines 25-29);

operatively connecting at least two of said plurality of signal paths 40 and 44 (fig. 1) to the first feed point for receiving communication signals through the first feed point, and at least a different one of said plurality of signal paths 42 and 43 (fig. 1) to the second feed point for receiving communication signals through the second feed point, each of the signal paths connected to the first and second feed points has a filter 10, 17,

and 25 (fig. 1) for filtering the communication signals in the corresponding frequency band (see col. 4, lines 29-40); and

providing cross-band isolation between at least two of said plurality of signal paths, wherein the communication signals received in at least one of the signal paths connected to the first feed point and the communication signals received in at least one of the signal paths connected to the second feed point are transmitted in the same frequency band and transmission mode (see 6 and 8 as well as 7 and 9 in fig. 1 as well as col. 4, lines 9-19).

Dvorkin does not teach the two signal paths connected to the first feed points adapted to receive communication signals in different frequency bands. Ahonen teaches the two signal paths connected to the first feed points adapted to receive communication signals in different frequency bands (see col. 3, lines 65-67 and col. 4, lines 1-3). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Ahonen to said device of Dvorkin in order to further expand the use of signals in a multi-band communication device.

Referring to Claim 34, Dvorkin teaches a multi-band, multi-mode communication device, comprising:

a plurality of electrically separated RF antennas, including a first antenna 4 (fig. 1) and a second antenna 5 (fig. 1), and a front-end module comprising:

at least a first feed point 30 and 31 (fig. 1) and a second feed point 32 and 33 (fig. 1) separately connected to the first and second antennas, and a plurality of signal paths 40 and 42-44 (fig. 1) operatively connected to the first and second feed points for

receiving communication signals in a plurality of frequency bands, each signal path having a filter 10, 17, 18, and 25 (fig. 1) for filtering the communication signals in the corresponding frequency band, wherein the communication signals received in at least one of the signal paths connected to the first feed point and the communication signals received in at least one of the signal paths connected to the second feed point are transmitted in the same frequency band and transmission mode (see 6 and 8 as well as 7 and 9 in fig. 1 as well as col. 4, lines 9-19).

Dvorkin does not teach the communication signals received in another different one of the signal paths connected to the first feed point transmitted in a different frequency band. Ahonen teaches the communication signals received in another different one of the signal paths connected to the first feed point transmitted in a different frequency band (see col. 3, lines 65-67 and col. 4, lines 1-3). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Ahonen to said device of Dvorkin in order to further expand the use of signals in a multi-band communication device.

Referring to Claim 35, Dvorkin also teaches a mobile terminal (see ABSTRACT).

Referring to Claim 36, Dvorkin also teaches a communicator device (see ABSTRACT).

3. Claims 1-3, and 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lahti (US 2002/0045427) in view of Dvorkin (US 6,381,471) and Ahonen (US 5,507,010).

Referring to Claim 1, Lahti teaches a receive front-end module for use in a multi-band, multi-mode communication device, the communication device having a plurality of electrically separated antennas 101a and 101b (fig. 2), said receive front-end module comprising:

at least two feed points (see feed points connected to 101a and 101b in fig. 2), adapted to connect seperately to at least two of said plurality of antennas for receiving communication signals in the communication device (see paragraph [0010]);

a plurality of signal paths, operatively connected to the feed points for simultaneously receiving communication signals in a plurality of frequency bands (see paragraph [0030], lines 1-4), wherein each signal path has a filter for filtering the communication signals in the corresponding frequency band (see paragraph [0005], lines 1-7).

Lahti does not teach at least one isolation component, disposed in the signal paths, for providing cross-band isolation between at least two of the signal paths. Dvorkin teaches at least one isolation component, disposed in the signal paths, for providing cross-band isolation between at least two of the signal paths (see 6 and 8 as well as 7 and 9 in fig. 1 as well as col. 4, lines 9-19). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Dvorkin to said device of Lahti in order to better isolate signals in different bands.

The combination of Lahti and Dvorkin does not teach at least two of said plurality of signal paths adapted to simultaneously receive communication signals from one of the

antenna through one of the two feed points. Ahonen teaches at least two of said plurality of signal paths adapted to simultaneously receive communication signals in a plurality of frequency bands from one of the antennas through one of the two feed points (see 1A, 1B, 10A and 10B of fig. 1 and col. 3, lines 59-65), and at least a different one of the said plurality of signal paths is adapted to receive communication signals from another one of the antennas through the other of the two feed points in a further frequency band different from the said plurality of frequency bands (see col. 3, lines 65-67 and col. 4, lines 1-3). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Ahonen to the modified device of Lahti and Dvorkin in order to further expand the use of signals in a multi-band communication device.

Referring to Claim 2, Dvorkin also teaches said isolation component comprising at least one signal amplifier 16 (fig. 1).

Referring to Claim 3, Lahti teaches at least two antennas comprising a first antenna 101a (fig. 2) and a second antenna 101b (fig. 1), and said at least two feed points comprises a first feed point operatively connected to the first antenna, and a second feed point operatively connected to the second antenna (see paragraph [0010]), and wherein said plurality of signal paths comprises:

a first signal path having a first filter 111a (fig. 2) for filtering the communication signals in the first frequency band, the first signal path operatively connected to the first feed point (see paragraph [0005], lines 1-7); and

a second signal path having a second filter 111b (fig. 2) for filtering the communication signals in the second frequency band, the second signal path operatively connected to the second feed point (see paragraph [0005], lines 1-7).

Lahti does not teach a third signal path having a third filter for filtering the communication signals in the third frequency band, the third signal path operatively connected to the second feed point, wherein the third frequency band is different from the second frequency band. Dvorkin teaches a third signal path having a third filter 43 (fig. 1) for filtering the communication signals in the third frequency band, the third signal path operatively connected to the second feed point, wherein the third frequency band is different from the second frequency band (see col. 4, lines 29-40); and

at least one matching circuit 14 and 22 (fig. 1) for matching the second and third filters.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Dvorkin to said device of Lahti in order to better isolate signals in different bands.

Referring to Claim 6, Dvorkin also teaches the first frequency band substantially covering a frequency range of 1805 – 1880 MHz;

the second frequency band substantially covering a frequency range of 1930 – 1930 MHz; and

the third frequency band substantially covering a frequency range between 2110 MHz and 2170 MHz (see col. 5, lines 15-25).

Referring to Claim 7, Dvorkin also teaches the communication signal received in the first signal path transmitted in a GSM mode;

the communication signal received in the second signal path transmitted either in a GSM mode or a W-CDMA mode; and

the communication signal received in the third signal path transmitted in a CDMA mode (see col. 4, lines 64-67).

Referring to Claim 8, Dvorkin also teaches the first frequency band substantially the same as the second frequency band (see col. 5, lines 15-25).

Referring to Claim 9, Dvorkin also teaches the third frequency band substantially covering a frequency range between 1805 MHz and 1880 MHz; and

the first and second frequency bands substantially covering a frequency range between 2110 MHz and 2170 MHz (see col. 5, lines 15-25).

Referring to Claim 10, Dvorkin also teaches the communication signal received in the third signal path is transmitted in a GSM mode; and

the communication signals received in the first and the second signal paths are transmitted in a W-CDMA mode (see col. 4, lines 64-67).

4. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dvorkin and Ahonen and further in view of Gitlin et al. (US 6,188,718).

Referring to Claim 13, Dvorkin teaches said at least two antennas comprising a first antenna and a second antenna 4 and 5 (fig. 1), and said at least two feed points comprise a first feed point 30 and 31 (fig. 1) operatively connected to the first antenna,

and a second feed point 32 and 33 (fig. 1) operatively connected to the second antenna, and wherein said plurality of signal paths comprises:

a first signal path 40 (fig. 1) having a first filter 10 (fig. 1) for filtering the communication signals in the first frequency band, the first signal path operatively connected to the first feed point, and a second signal path having a second filter for filtering the communication signals in the second frequency band, the second signal path operatively connected to the second feed point.

The combination of Ahonen and Dvorkin do not teach a third antenna electrically separated from the first and second antenna, a third feed point, operatively connected to the third antenna for receiving communication signals in the communication device; a third signal path, operatively connected to the third feed points for receiving communication signals in a third frequency bands; and further means, disposed in the third signal path, for providing cross-band isolation between the third signal path and at least one of said at least two signal paths. Gitlin teaches a third antenna 112 (fig. 2) electrically separated from the first and second antenna, a third feed point (staring from 112 in fig. 2), operatively connected to the third antenna for receiving communication signals in the communication device; a third signal path (path leading from 112 in fig. 2), operatively connected to the third feed points for receiving communication signals in a third frequency bands; and further means 300 (fig. 1), disposed in the third signal path, for providing cross-band isolation between the third signal path and at least one of said at least two signal paths. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Gitlin to the

modified system of Ahonen and Dvorkin in order to provide a simpler structure for the communications device.

Referring to Claims 14 and 15, Dvorkin also teaches the communication signal received in the first and second signal paths is transmitted in a frequency band substantially between 2110 MHz and 2170 MHz and the communication signal received in the third signal path is transmitted in a frequency band substantially between 1930 MHz and 1990 MHz (see col. 5, lines 15-25).

5. Claims 4, 5, 11, 12 and 16-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dvorkin, Ahonen and Gitlin in view of Ella (US 2003/0128081).

Referring to Claims 4, 11, and 16, the combination of Gitlin, Ahonen and Dvorkin do not teach a first balun disposed in the first signal path between the first filter and the first feed point; a second balun disposed in the second signal path between the second filter and the second feed point; and a third balun disposed in the third signal path between the third filter and the second feed point. Ella teaches a first balun 10 (fig. 11) disposed in the first signal path between the first filter and the first feed point; a second balun 10' (fig. 11) disposed in the second signal path between the second filter and the second feed point; and a third balun 10' (fig. 11) disposed in the third signal path between the third filter and the second feed point. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Ella to the modified system of Ahonen, Gitlin, and Dvorkin in order to conserve energy in the communications device.

Referring to Claims 5, 12, and 17, Gitlin also teaches a first signal amplifier 530 (fig. 5) disposed in the first signal path, operatively connected to the first filter;

a second signal amplifier 531 (fig. 5) disposed in the second signal path, operatively connected to the second filter; and

a third signal amplifier 532 (fig. 5) disposed in the third signal path, operatively connected to the third filter. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Gitlin to the modified system of Ahonen, and Dvorkin in order to provide a simpler structure for the communications device.

Referring to Claim 18, Gitlin also teaches a fourth signal path operatively connected to a different one of said plurality of antennas for receiving communication signals in a frequency band substantially between 1930 MHz and 1990 MHz (see fig. 5 where w^n means that the device allows for more signal paths). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Gitlin to the modified system of Ahonen and Dvorkin in order to provide a simpler structure for the communications device.

Referring to Claim 19, Dvorkin also teaches the received communication signals in first and second signal paths are transmitted in one of the following modes: W-CDMA (EU) and W-CDMA (US2) (see col. 4, lines 64-67).

Referring to Claim 20, Dvorkin also teaches the received communication signals in the third and fourth signal paths are transmitted in one of the following modes: W-CDMA (US1) and 1900GSM (see col. 4, lines 64-67).

Referring to Claim 21, Dvorkin also teaches the received communication signals in the third signal path are transmitted in W-CDMA (USII mode, and the received communication signals in the fourth signal path are transmitted in one of the following modes: W-CDMA (US1) and 1900GSM (see col. 4, lines 64-67).

Referring to Claim 22, Ella also teaches the baluns integrated in a sub-module (fig. 11). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Ella to the modified system of Ahonen, Gitlin, and Dvorkin in order to conserve energy in the communications device.

Referring to Claim 23, Dvorkin also teaches the signal amplifiers integrated in a sub-module (fig. 1).

Referring to Claim 24, Dvorkin also teaches a first sub-module for disposing the first, second and third feed points and the first, second and third signal paths 30-32 (fig. 1); and a second sub-module for disposing the fourth signal path 33 (fig. 1).

Referring to Claim 25, Gitlin also teaches a further antenna (see fig. 5 where w^n means that the device allows for more antennas) having a further feed point; a fourth signal path (see fig. 5 where w^n means that the device allows for more signal paths), operatively connected to the further feed point, for receiving a communication signal in a fourth frequency band (see col. 4, lines 50-61);

a fifth signal path (see fig. 5 where w^n means that the device allows for more signal paths), operatively connected to the further feed point, for receiving a communication signal in a fifth frequency band different from the fourth frequency band,

wherein each of the fourth and fifth signal paths has an input end and an output end, the input end operatively connected to the further feed point (see col. 4, lines 50-61),

Gitlin does not teach a balun disposed at the input end, a signal amplifier disposed at the output end, and a filter disposed between the signal amplifier and the balun; and means, operatively connected to the further feed point, for matching the filters in the fourth and fifth signal paths. Ella teaches a balun disposed at the input end 10 (fig. 11), a signal amplifier 150 (fig. 11) disposed at the output end, and a filter 120 (fig. 8) disposed between the signal amplifier and the balun; and means 210 (fig. 11), operatively connected to the further feed point, for matching the filters in the fourth and fifth signal paths. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Ella to the modified system of Gitlin, Ahonen and Dvorkin in order to conserve energy in the communications device.

Referring to Claim 26, Dvorkin also teaches the communication signals received in the first and second signal paths transmitted in a frequency band substantially between 2110 MHz and 2170 MHz in a W- CDMA mode, and the communication signals received in the third and fourth signal paths are transmitted in a frequency band substantially between 1930 MHz and 1990 MHz in either a W-CDMA mode or a GSM mode (see col. 4, lines 64-67 and col. 5, lines 15-25).

Referring to Claim 27, Dvorkin also teaches the communication signals received in the fifth signal path are transmitted in the fifth frequency band substantially between 1805 MHz and 1880 MHz (see col. 5, lines 15-25).

Referring to Claim 28, Dvorkin also teaches a first sub-module for disposing the first, second and third signal paths and the first, second and third feed points, and a second sub-module for disposing the fourth and fifth signal paths and the further feed point (fig. 1).

Referring to Claim 29, Gitlin also teaches a sixth signal path (see fig. 5 where w^n means that the device allows for more signal paths), operatively connected to the further feed point, for receiving a communication signal in a sixth frequency band different from the fourth and fifth frequency band, the sixth signal path having:

an input end w1 (fig. 5) and output end v1 (fig. 5), the input end operatively connected to the further feed point.

Gitlin does not teach a balun disposed at the input end, a signal amplifier disposed at the output end, and a filter disposed between the signal amplifier and the balun, for filtering the communication signal in the sixth frequency band, wherein the matching circuit is also used for matching the filter in the sixth signal path. Ella teaches a balun disposed at the input end 10 (fig. 11), a signal amplifier 150 (fig. 11) disposed at the output end, and a filter 120 (fig. 8) disposed between the signal amplifier and the balun, for filtering the communication signal in the sixth frequency band, wherein the matching circuit is also used for matching the filter in the sixth signal path. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Ella to said device of Gitlin in order to conserve energy in the communications device.

Referring to Claim 30, Dvorkin also teaches the communication signals received in the first, second and sixth signal paths are transmitted in a frequency band substantially between 2110 MHZ and 2170 MHz in a W-CDMA mode, the communication signals received in the third and fourth signal paths are transmitted in a frequency band substantially between 1930 MHz and 1990 MHz in either a W-CDMA mode or a GSM mode, and the communication signals received in the fifth signal path are transmitted in the fifth frequency band substantially between 1805 MHz and 1880 MHz (see col. 4, lines 64-67 and col. 5, lines 15-25).

Referring to Claim 31, Dvorkin also teaches said at least two antennas comprising a first antenna 4 (fig. 1) and a second antenna 5 (fig. 1), and said at least two feed points comprising:

a first feed point 30 (fig. 1), operatively connecting a first signal path to the first antenna, for receiving communication signals in a first frequency band, and a second feed point 32 (fig. 1), operatively connecting a second signal path to the second antenna, for receiving communication signals in the second frequency band.

The combination of Ahonen and Dvorkin does not teach said plurality of antenna further comprising a fourth antenna, a fifth antenna, and a sixth antenna.

Gitlin teaches said plurality of antenna further comprising a fourth antenna, a fifth antenna, and a sixth antenna (see fig. 5 where w^n means that the device allows for more antennas), and the receive front-end module further comprising:

a fourth feed point, operatively connecting a fourth signal path to the fourth antenna, for receiving communication signals in the fourth frequency band; a fifth feed

point, operatively connecting a fifth signal path to the fifth antenna, for receiving communication signals in the fifth frequency band; and a sixth feed point, operatively connecting a sixth signal path to the sixth antenna, for receiving communication signals in the sixth frequency band, and wherein the receive front-end module comprises a first sub-module for disposing the first, second and third signal paths, and a second sub-module for disposing the fourth, fifth and sixth signal paths, and the communication signals in at least two of the six signal paths are transmitted in the same frequency band and transmission mode (see fig. 5 where w^n means that since the device allows for more antennas, then that obviously means that the feed point and signal paths are also included). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Gitlin to the modified device of Dvorkin and Ahonen in order to provide a simpler structure for the communications device.

Referring to Claim 32, Dvorkin also teaches the first and fourth signal paths in which the received communication signals are transmitted substantially in a frequency range between 2110 MHz and 2170 MHz; the second and third signal paths in which the received communication signals are transmitted substantially in a frequency range between 1930 MHz and 1990 MHz; and the fifth and sixth signal paths in which the received communication signals are transmitted substantially in a frequency range between 1805 and 1880 MHz (see col. 5, lines 15-25).

Response to Arguments

6. Applicant's arguments with respect to claims 1-33 have been considered but are moot in view of the new ground(s) of rejection.

7. Applicant's arguments filed 3/31/2006 have been fully considered but they are not persuasive.

Regarding Claims 33 and 34, the applicant argues that the combination of Dvorkin and Ahonen cannot be used to read on the claims because both the references only have one receive antenna. While both the Dvorkin and Ahonen references may only have one receive antenna for receiving signals from another source, the claims do not specifically state where the antennas and feed points are receiving signals from. This means that the examiner can assume that the other antenna and feed point, the transmit antenna and feed point, can also "receive" signals from inside the circuit. The examiner at this point believes that the claims need to be more specific as to exactly where the signals are being received from in order for the claims to overcome the cited references.

Regarding Claim 1, the applicant argues that the Laiti reference does not teach "having at least two signal paths adapted to simultaneously receive communication signals in a plurality of frequency bands from one antenna and at least one different signal path adapted to receive communication signals from another antenna in a different frequency band". The examiner disagrees. First of all, it is very clear that the two signal paths **simultaneously** receive signals as the first four lines of paragraph [0030] of the Laiti reference states. There is no indication in the paragraph that the signals are alternately received. Secondly, in response to the argument stating that the

signals are received in the same frequency, the examiner would like to state that by definition, spread-spectrum signals inherently imply frequency hopping. Therefore, the spread-spectrum signals that are received are in different frequency bands.

For the above reasons, the examiner stands by his rejection.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eugene Yun whose telephone number is (571) 272-7860. The examiner can normally be reached on 9:00am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew D. Anderson can be reached on (571)272-4177. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Eugene Yun
Examiner
Art Unit 2618

EY

Matthew D. Anderson
Supervisory Patent Examiner